

**Oral Statement**  
**Of**  
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**Hurricane Katrina Independent Panel**  
**Federal Communications Commission**

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Good morning. I wish to thank FCC Chairman Martin for convening this panel on a topic that is vital to the health and safety of all Americans. I also want to express appreciation to Nancy Victory for chairing this panel and further acknowledge my fellow panelists who bring a wealth of experience and information to the table.

My name is Kelly Kirwan and I am Vice President of Motorola's State and Local Government and Commercial Markets Division with responsibility for sales in twenty-six states in the Eastern U.S. and Washington, D.C.

I led Motorola's emergency response team in the wake of Hurricane Katrina's devastation to the Gulf coast, and welcome the opportunity over the next six months to share with the Commission our experience during this tragedy and our recommendations for the future.

Our history in providing mission critical public safety voice and data communications dates back to over 77 years. The communication systems we develop are in use across America, connecting police, firefighters, emergency management and many other government agencies.

In these brief comments, I will express Motorola's views on the communications issues which affected first responders and federal official's ability to communicate during Hurricane Katrina.

I will also present a wide range of solutions available to better prepare our public safety communications systems and first responders for such disasters in the future.

Motorola has about 20 public safety customers---primarily the Louisiana state police, counties in Mississippi and parishes in Louisiana---that were impacted.

Approximately 72 hours prior to Katrina making landfall, we activated our corporate emergency response plan. As a result, we surveyed and inventoried every single piece of public safety emergency communications equipment, ordered surplus equipment and shipped it immediately to staging areas in the Gulf Coast region.

We mobilized more than 100,000 pieces of equipment and more than 300 of our employees and partners were on the front lines working directly with customers to anticipate needs, understand their issues, implement contingency plans, and offer any additional assistance.

Why were so many public safety communications systems taken down by the storm? Simply put, Katrina, at one point a Category Five hurricane, was tremendously destructive with extraordinary winds and accompanying flooding. Even the most robust and reliable public safety networks are vulnerable to these conditions.

Together, our responses to Hurricanes Katrina and Rita, have become the largest disaster recovery effort in our history.

What lessons can be drawn from the hurricanes? There are several. One is that communications systems need to be designed and constructed for the worst-case scenarios expected in a local region. Generally, most public safety communications systems are designed to withstand Category 3 hurricanes.

First responders have called this the need for reliable “operability,” meaning that systems must first survive and function.

System design to survive worst case scenarios must be part of the planning for new or upgraded systems. Even relatively new systems should be re-examined to determine whether additional “hardening” is needed. This process is location specific. There is no “one size fits all” solution.

Whether the risks are hurricanes along the coasts, twisters in “tornado alley,” or earthquakes along major fault lines such as those on the West Coast and in the Midwest, Katrina has taught us one overriding lesson...if we don’t prepare for the worst-case disasters, our systems will be very vulnerable when they do occur.

Second, operability must be augmented by the larger notion of true interoperability. Katrina is yet another reminder of the inadequacies of responding agencies ability to effectively talk to one another by private radio. Spectrum, money, and planning are all part of the solution.

We have a national standard for interoperability. Over ten years ago, the first responder community recognized that one open standard for future digital wireless systems was imperative. They created the standard, known as Project 25. Today, there are more than 20 manufacturers of Project 25 equipment for public safety.

While most state-wide system plans incorporate the Project 25 standard, local and state agencies do not have adequate funding and spectrum for the long term fix of system availability and interoperability.

The Department of Homeland Security has estimated that it could take 20 years to complete this work at the pace it is currently being funded. There is a growing consensus that this pace must be accelerated significantly.

Both the House and Senate have approved legislation to transition television broadcasters from the 700 MHz band by 2009. It is absolutely vital that this legislation be completed and become law because it will finally free up spectrum that has been allocated to public safety for nearly a decade.

Spectrum is one advantage that New Orleans did have. Because TV Broadcasters are not blocking 700 MHz public safety spectrum allocation in New Orleans or Louisiana, this spectrum was available for first responders. As a result, Motorola was able to bring in emergency trucks operating on this spectrum, hand out hundreds of radios and operate as soon as the first responders needed the system. Without that 700 MHz being available in the Gulf Coast region, things could have been much worse.

Should a major emergency arise today in cities like New York, Los Angeles or San Francisco, that additional spectrum would not be available to first responders.

Third, resources should be provided to assure mission critical public safety communications can be restored on an emergency basis in any area of the country within 12 hours. One way to accomplish this is to pre-position

around the nation vehicles that are self contained and come equipped with hundreds of portable radios for immediate deployment.

Fourth, priority must be given to alternate sources of energy, such as portable fuel cell cartridges, to power handheld public safety radios in the event electric power outages prevent recharging radio batteries. With this technology, radios can be re-fueled “on the go” even if electric power to chargers has not been restored.

Fifth, we must augment our primary networks with alternative technologies that can provide situational communications, such as MESH networking and satellite. We should move toward a more sophisticated use of existing satellite communications to tie together different government entities during emergencies.

Recently, Motorola tested a Project 25 voice call, along with a live video stream, over a broadband satellite link. This demonstrates the immensely flexible use of this Project 25 standard which can connect any public safety, military or relief vehicle. Any vehicle having an innovative satellite antenna could be in communication with a broadband geosynchronous earth orbit (GEO) satellite.

That satellite then takes the signal, whether voice or broadband data, and returns it to any other location with command and control capability outside the immediate area of the disaster. Signals could also be routed between vehicles in different areas where they, in turn, can provide “hot spots” for first responder portable handsets, also using Project 25 technology.

Mesh networking, with roots in the military, can serve as a rapidly deployable mobile broadband solution to relay critical information between responding units. Mesh can be used with pre-deployed infrastructure, or an ad hoc broadband network formed instantly with other users. It is deployed quickly because it does not require towers or other land-based infrastructure. Mesh uses multi-hopping technology to allow the devices, in police radios for example, to become the network. Such mesh-enabled architecture delivers real time data to detect, prevent, and immediately respond to any problem.

Sixth, an important component of the national mission critical response effort is a federal civilian agency standards-based system that is truly nationwide and is usable in geographies that cover as much of the population as possible. This system, currently in the procurement phase, is intended to be fully interoperable with state and local systems.



While separate federal agency systems exist today, such as the Secret Service and the FBI, the procurement is intended to create a true nationwide, federal civilian interoperable system in support of law enforcement and homeland security. It is known as the Integrated Wireless Network or IWN.

A final component of the federal mission critical communications solution is an interoperable network of networks built, owned, and operated by the US military, largely covering only its U.S. military facilities, and again built to the P25 standard. That network of networks has been mandated in DOD directives and is about 75% complete or funded.

In conclusion, there is ample room for improvement in serving the American people's needs after any disaster, whether caused by terrorism or Mother Nature. Fortunately there are clear ideas for improvement that can be readily achieved with dedication and sufficient spectrum and financial resources.

I look forward to working with this panel to consider these and other emergency recommendations you may make to the FCC for consideration.